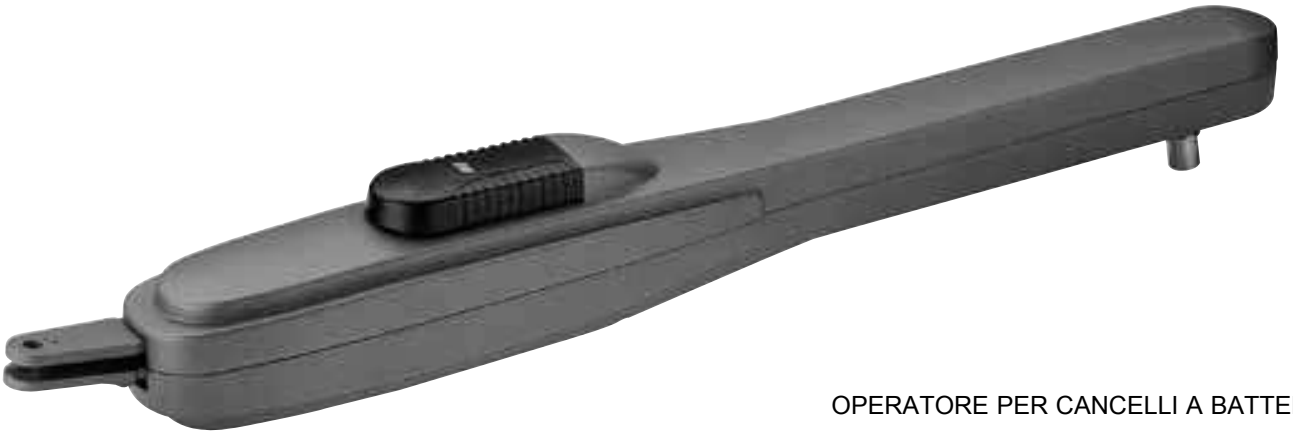
PRINCE 24V

Brevettato - Patented
N. 1 503 019 - US 7,000,353 B2

con / avec / with / mit
T2 24V



OPERATORE PER CANCELLI A BATTENTE
OPÉRATEUR POUR PORTAILS À BATTANT
OPERATOR FOR LEAF GATES
TORANTRIEB FÜR FLÜGELTORE
OPERADOR PARA CANCELAS DE BATIENTE

Operatore Operateur Operator Torantrieb Operador	Alimentazione Alimentation Power Supply Stromspannung Alimentacion	Peso max anta Poids maxi battant Max leaf weight Max. Torgewicht Peso max hoja	Spinta Poussée Thrust Schubkraft Empuje	Spinta max Poussée maxi Max thrust Max Schubkraft Empuje max.	codice code code code codigo
PRINCE 24V	230V 50/60Hz 120V 60Hz	250 kg / 550 lbs	100 kg / 220 lbs	140 kg / 309 lbs	AA14031 a richiesta/on request

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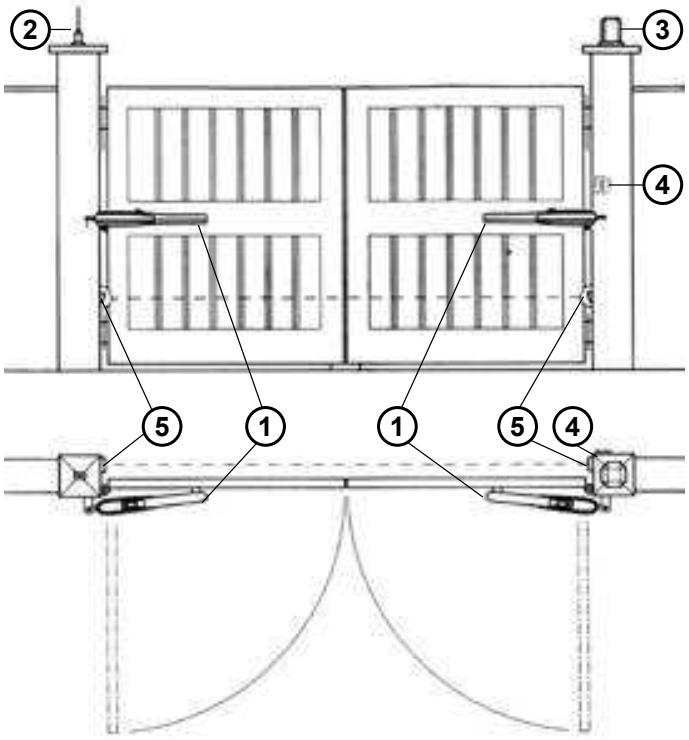


1 - PRINCE 24V operator
2 - Tuned aerial
3 - Flashing lamp
4 - Key selector
5 - Photoelectric cells (external)

1

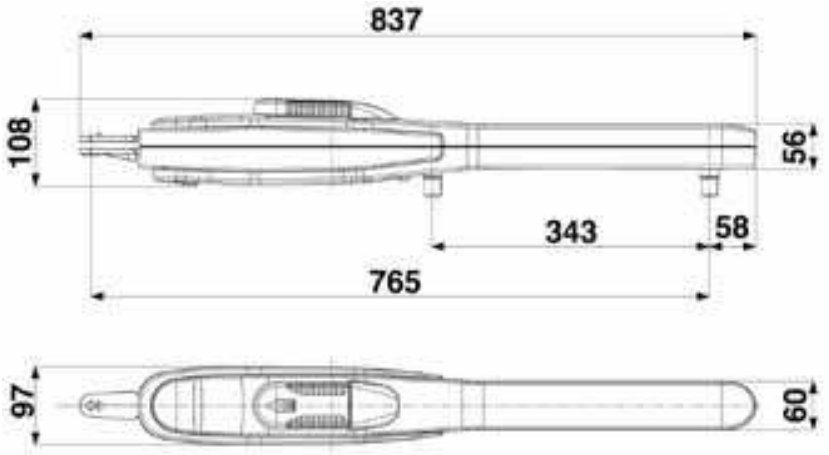
TECHNICAL FEATURES

PRINCE 24V is a linear operator designed for swing gates long up to 2 m and weight up to 250 kg (Pic. 1).
PRINCE 24V works without electric limit switches, but with mechanical stoppers.

N.B.: It is advisable to fit an electrical lock to ensure an efficient gate locking.

TECHNICAL DATA	PRINCE 24V	
Max. leaf length	m.	2
Max. leaf weight	kg	250
Max. travel	mm	343**
Average opening time	s.	14
Operating speed	m/s.	0,0134
Power supply		24Vdc
Nominal Motor capacity	W	12
Max Motor capacity (blocked)	W	89
Nominal Power absorbed	A	0,88
Max Power absorbed (blocked)	A	3,72
Nominal Thrust force	N	1000
Max Thrust force (blocked)	N	1500
Normative cycles	n°	∞ - 14s/2s
Daily operations suggested	n°	60
Service		80%
Guaranteed consecutive cycles	n°	60/14s
Weight of the PRINCE 24V	kg	5
Noise	db	<70
Operating Temperature	°C	-30 ÷ +55°C
Protection grade	IP	44

** With incorporated mechanical stopper that cuts out during opening. If the mechanical stopper is used also during the closing (optional), the maximum stroke is reduced by 30 mm.



Measurements in mm **2**

PRE-INSTALLATION CHECK LIST

The gate leaves must be firmly fixed to the hinges on the gate pillars, they must not flex during the movement and they must swing without any friction. Before installing the operator, make sure you have enough room to fix the operator on the pillar.
In case the gate is like the one depicted in Pic. 1, there is no need for any modification.
Gate features and installation must comply with local regulations and standards.
The gate can be automated only if it is in good conditions and complies with EN12604 norms.
The gate leaf must not have a pedestrian doors in its frame. Should there be a pedestrian opening, take the appropriate steps according to EN12435 norms (e.g. cutting out the motor when the pedestrian door is opened by fixing a safety micro switch connected to the control board).
Make sure not to create any trapping points or areas (e.g. with the gate completely opened, between any opening in the gate frame and the side wall).

Parts to install to comply EN 12453 standard COMMAND TYPE

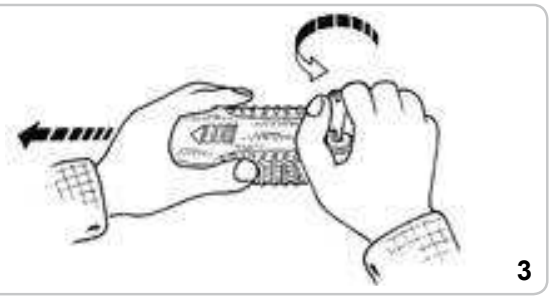
COMMAND TYPE	USE OF THE SHUTTER		
	Skilled persons (out of public area)	Skilled persons (public area)	Unrestricted use
with manned operation	A	B	non possibile
with visible impulses (e.g. sensor)	C or E	C or E	C and D, or E
with not visible impulses (e.g. remote controldevice)	C or E	C and D, or E	C and D, or E
automatic	C and D, or E	C and D, or E	C and D, or E

A: Command button with manned operation, like code ACG2013
B: Key selector with manned operation, (gate operating as long as the button is held pressed) like code ACG1010.
C: Adjustable power of the motor.
D: Safety edges to keep thrust force within the limits of EN12453 regulation - Appendix A.
E: Photocells, like code ACG8026 (to install every 60÷70 cm from top to bottom of the gate ,to a maximum of 2,5 m - EN 12445 point 7.3.2.1)

EMERGENCY MANUAL RELEASE

This applies only if the unit is not equipped with back-up batteries. In case of a black-out, the gate can be pulled open after the operator has been unlocked with the emergency key provided (rotate the key by 90° clockwise, Pic. 3).
Caution
In order to be able to manually open the gate leaf make sure of the following:
- The gate leaves must be endowed with appropriate handles;
- Position of the handles onto the gate leaves must be in risk free area;
- The manual force necessary to move the gate leaves should not be higher than 225 N, in case of installations at domestic/private dwellings, and 390N in case of installations in business premises (according to points 5.3.5 of the EN12453 norm).

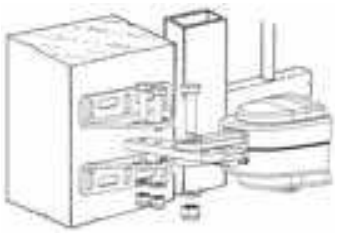
Note: in case of an installation with an overlapping two leave swing gate to ensure a safe/proper locking a mechanical bolt must be installed along with an electric lock. The mechanical bolt (ACG5000) must be installed at the bottom of the first gate leaf to close so that it will be simply operated by the pressure of the second gate leaf. The electric lock will simply latch one gate leaf to the other.


3

FIXING THE ACTUATOR ATTACHMENT TO THE COLUMN

To obtain a correct movement of the gate leaf, it is necessary to comply with the measurements given.
In case an iron pillar is available, weld the bracket straight to it.
In case you need to fix the bracket onto a concrete pillar, use the fixing plate as shown in picture 4, that will have to be fastened with 4 Fischer screws of Ø 8 mm.
In case you have a wall parallel to gate leaves when in open position, you must allow for a niche in which the operator can fit in.


4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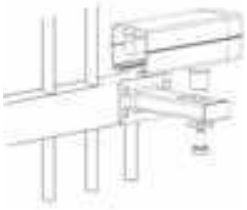
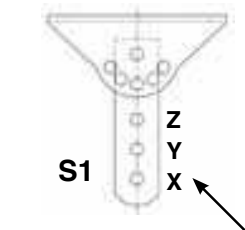
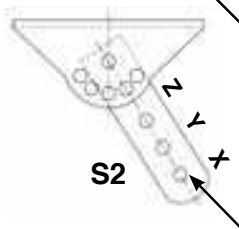
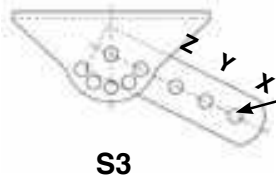

6

FIXING THE ACTUATOR ATTACHMENT TO THE GATE

Weld the second bracket to the gate (pictures 5,6)
During installation make sure to comply with the measurements mentioned in the table below.
Fix the PRINCE and try several times to open and to close the gate, controlling that the cover does not touch the moving gate.

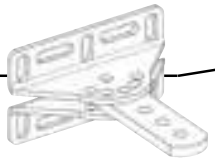


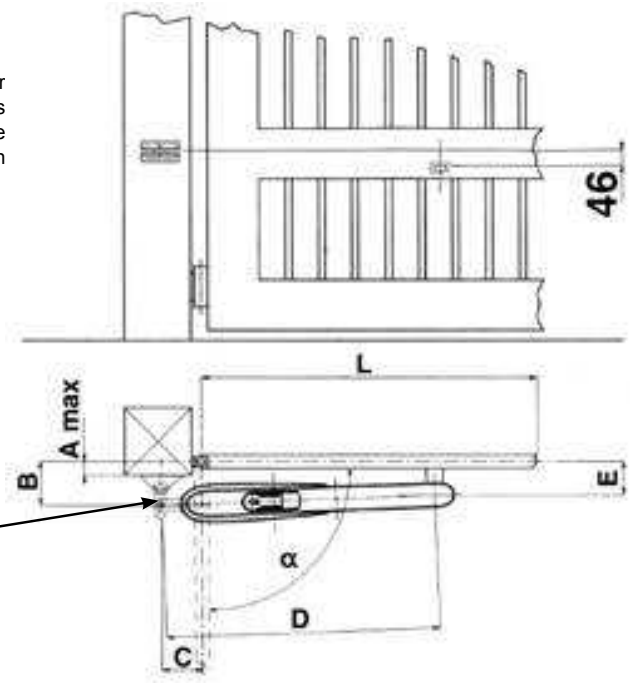




In order to carry out a proper installation of the operator, it is necessary to comply with the geometry measurement shown in the tables below.

COL
Column attachment

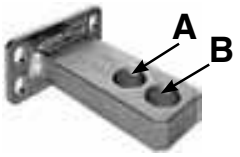




Respect the measures for a correct installation

L Min.÷Max	α	A max	B	C	D	E	T sec	COL	ANT
1÷2	90°	0	100	100	765	90	13,5	S2-X	A
		20	100	100	765	90	13,5	S2-Y	A
		40	100	100	765	90	13,5	S3-X	A
		60	110	100	765	90	14	S3-Y	A
		80	140	110	765	115	17	S3-X	B
		100	160	110	765	115	18	S3-X	B
		120	180	110	765	115	19,5	S3-X	B
		140	210	110	765	115	21,5	S1-Z	B
		150	220	120	765	115	23	S1-Z	B
	110°	20	110	140	765	90	17	S1-Y	A

ANT
Leaf attachment



If the pillar is too large, and it is not possible to adjust the actuator complying the measurements (B), you must make a niche in the pillar or you have to move the gate closer to the edge of the pillar.

Measures WITH 2 MECHANICAL STOPPERS

L Min.÷Max	α	A max	B	C	D	E	T sec	COL	ANT
1÷2	90°	0	100	100	730	90	13,5	S2-X	A
		20	100	100	730	90	13,5	S2-X	A
		40	100	100	730	90	13,5	S3-X	A
		60	110	100	730	90	14	S3-X	A
		80	140	110	730	115	17	S3-X	B
		100	160	110	730	115	18	S3-X	B
		110	180	120	730	115	20	S1-Z	B
	110°	20	100	140	730	90	16	S2-Y	A

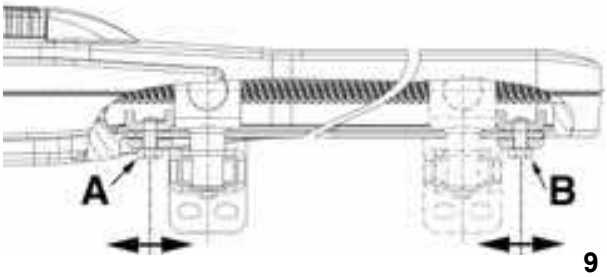
MECHANICAL STOPPER - OPTIONAL (Code ACG8088)

Optional mechanical stopper to stop the closing, if the gate is not fitted with a floor stopper.

8

MECHANICAL STOPPER ADJUSTMENT

To adjust the stoppers you have to follow the scheme (Pic. 9).
To set the opening limit it is enough to fix the stopper (A) in the needed position by tightening the 8mA screw with a n. 13 key.
To obtain the desired closing limit you must adjust the stopper (B) (OPTIONAL) in the needed position and tighten it as for stopper (A).

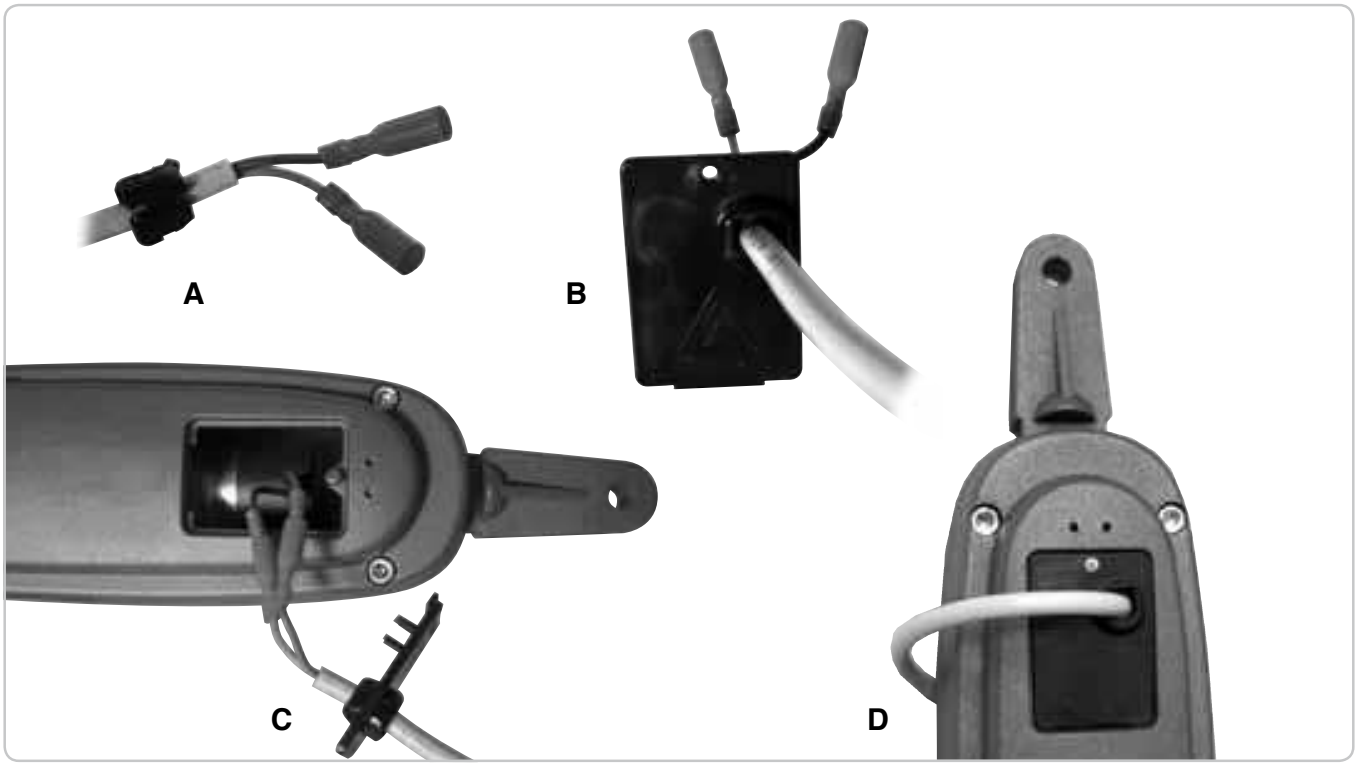


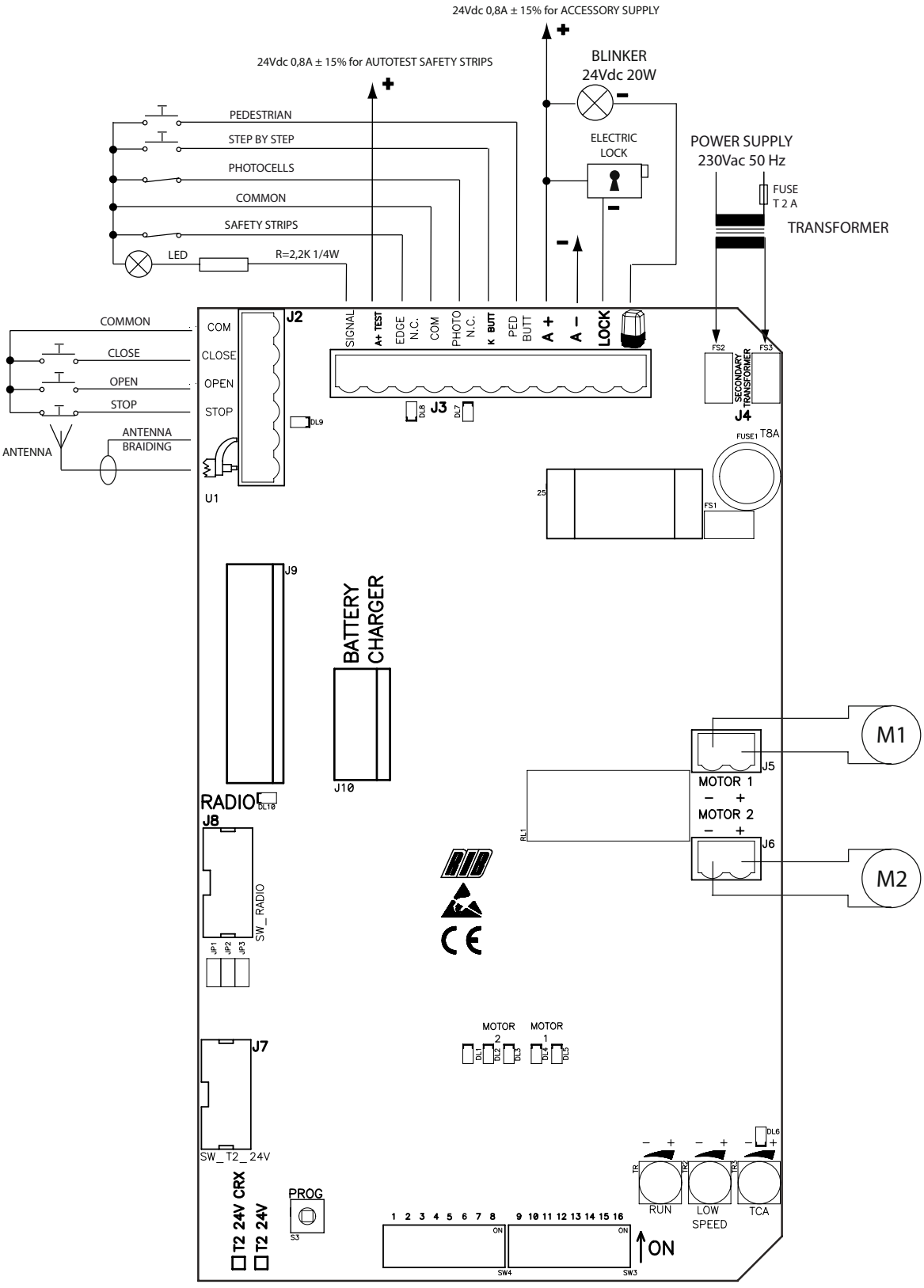
9

MAINTENANCE

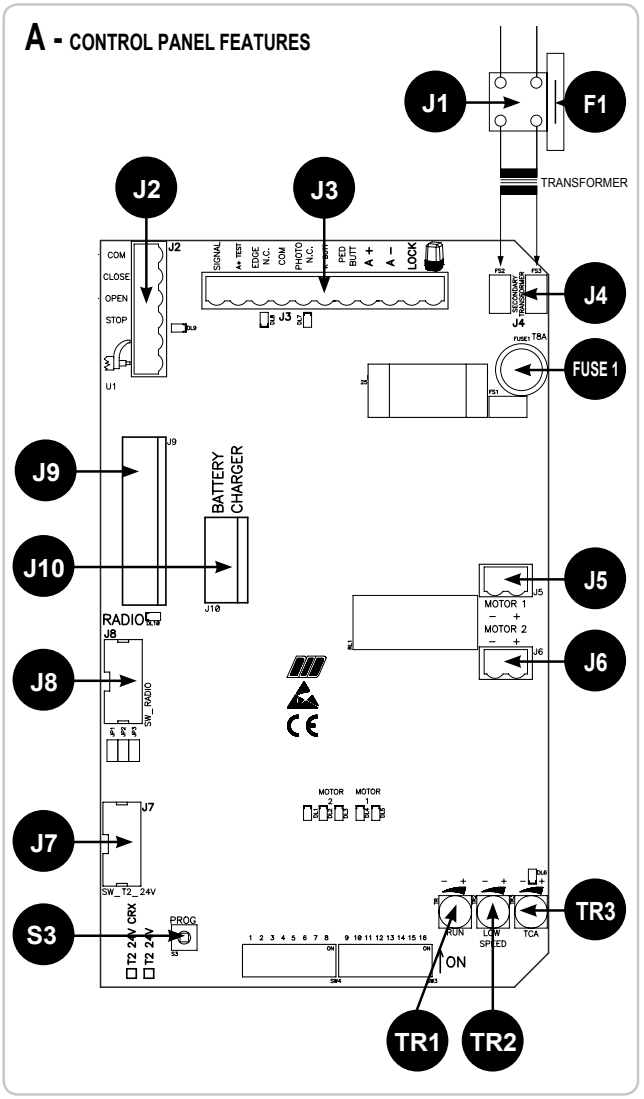
Maintenance should be carried out by skilled and qualified staff only, after switching off the mains supply.
Regularly lubricate the hinges of the gate every 6 months and keep the thrust needed to move the gate leaf monitored (according to EN12453).

ELECTRIC CONNECTIONS




24Vdc 0,8A ± 15% for ACCESSORY SUPPLY
24Vdc 0,8A ± 15% for AUTOTEST SAFETY STRIPS
BLINKER
24Vdc 20W
ELECTRIC
LOCK
POWER SUPPLY
230Vac 50 Hz
FUSE
T 2 A
TRANSFORMER
PEDESTRIAN
STEP BY STEP
PHOTOCELLS
COMMON
SAFETY STRIPS
LED
R=2,2K 1/4W
COMMON
CLOSE
OPEN
STOP
ANTENNA
ANTENNA
BRAIDING
J2
COM
CLOSE
OPEN
STOP
U1
SIGNAL
A+ TEST
EDGE N.C.
COM
PHOTO N.C.
K BUT
PED BUTT
A +
A –
LOCK
J3
FS2
FS3
SECONDARY TRANSFORMER
J4
FUSE1 T8A
FS1
J9
BATTERY CHARGER
J10
RADIO
J8
SW_RADIO
JP1
JP2
JP3
M1
J5
MOTOR 1
MOTOR 2
J6
M2
J7
SW_T2_24V
MOTOR 2
MOTOR 1
PROG
S3
T2 24V CRX
T2 24V
1 2 3 4 5 6 7 8
9 10 11 12 13 14 15 16
ON
SW4
SW3
RUN
LOW SPEED
TCA
DL6

A - CONTROL PANEL FEATURES



J1	N F	Power supply 230 Vac 50/60 Hz - external to the control panel - (120V/60Hz upon request)
J2	COM.	Common contact
	CLOSE	Closing impulse contact (NA)
	OPEN	Opening impulse contact (NA)
	STOP	STOP impulse contact (NC)
	AERIAL	Radio Antenna
J3	SIGNAL	Gate open state and battery state output indicator (24Vdc 3W max)
	A+TEST	+ 24Vdc safety strip self-test power supply
	EDGE N.C.	Safety strip contact (NC)
	COM.	Common contact
	PHOTO N.C.	Photocells contact (NC)
	K BUTT.	Single pulse contact (NO)
	PED. BUTT.	Pedestrian opening contact (NA)
	A+	+ 24Vdc accessories power supply
	A -	- 24Vdc accessories power supply
	LOCK	Electric lock connection (MAX 15W 12V) - 24Vdc blinker (code ACG7061) power supply. **Pay attention to the polarity.**
J4	SECONDARY TRANSFORMER	Connection to secondary coil of transformer 18 Vac
J5	MOTOR 1	MOTOR 1 CONNECTION (without polarity)
J6	MOTOR 2	MOTOR 2 CONNECTION (without polarity)
J7	SW T2 24V	Connector dedicated to the factory programming. **DO NOT REMOVE ANY JUMPER! OTHERWISE THE OPERATOR WILL NOT WORK!**
J8	SW RADIO	Connector dedicated to the factory programming (only CRX control board) **DO NOT REMOVE ANY JUMPER! OTHERWISE THE OPERATOR WILL NOT WORK!**
J9	RADIO	Built-in radio module (model CRX), or connector for radio receiver RIB, 24 Vdc supply
J10	BATTERY CHARGER	Connector for charge card of 24Vdc battery (code ACG4648)
TR1	TRIMMER RUN	Trimmer for high speed adjustment operations
TR2	TRIMMER LOW SPEED	Trimmer for low speed adjustment operations
TR3	TRIMMER TCA	Trimmer for automatic closing time adjustment (DISABLED DEFAULT AND DL6 LED OFF)
S3	PROG	Programming button
FUSE 1	T 8 A	Motor protection fuse
F1	T 2 A	Transformer protection fuse

B - SETTINGS

DIP 1 **(ON) - MOTOR ROTATION DIRECTION CONTROL (POINT C)**
DIP 2 **(ON) - TIMER (POINT D)**
DIP 3 **(ON) - ACTIVATES DOOR RELEASE DURING PHASES OF SLOWDOWN AND TOTAL OPENING AND CLOSING (AS PER THE IMPACT TESTS OF EN12453)**
DIP 1-2 **MEMORIZATION/CANCELLATION OF RADIO CONTROL CODES FOR TOTAL OPENING (ONLY MODEL CRX) (POINT E)**
DIP 1-3 **MEMORIZATION/CANCELLATION OF RADIO CONTROL CODES FOR PEDESTRIAN OPENING (ONLY MODEL CRX) (POINT F)**
DIP 2-1 **MICRO-SWITCH CONTROLLER FOR PEDESTRIAN OPENING TIMER**
DIP 4 Photocells always active (OFF) - Photocells active only during closing (ON)
DIP 5 Pre-blinking (ON) - Normal blinking (OFF)
DIP 6 Single pulse command (K BUTT) and step-by-step radio receiver (OFF) - automatic (ON)
DIP 7 Power sensor operation (ON-activated) time operation (OFF-activated).
DIP 8 Electric lock activation (ON-activated)
DIP 9 Electric lock pulse release (ON-activated)
DIP 10 Electric lock pulse engagement (ON-activated)
DIP 11 Easy release activation (ON-activated)
DIP 12 Sensor TEST activation (ON-activated).
DIP 13 Selection of 1 or 2 motor operation (default OFF 2 motors)
DIP 14 **OFF**
DIP 15 **OFF**
DIP 16 **IMMEDIATE CLOSING AFTER PASSING IN FRONT OF PHOTOCELLS**
ON **ACTIVATED**
OFF **DEACTIVATED**
JP1 => Check that the jumper is inserted!
JP2 => Check that the jumper is inserted!
JP3 => Check that the jumper is inserted!
PROG => S3 Programming button

ADJUSTMENTS
ATTENTION: PUT DIP 3 IN THE ON MODE ONLY AFTER HAVING CARRIED OUT ALL THE PROGRAMMING PROCEDURES.
NOTE: WITH DIP 3 (ON) BRIEF GATE REVERSAL AFTER IMPACT IS ACTIVATED.
THIS BRIEF GATE REVERSAL PERMITS STATIC FORCE TO BE REDUCED TO ZERO WITHIN 5 SECONDS AS PER STANDARD EN12453 POINT A.2.2 (ACCEPTABLE STATIC FORCE), THEREBY COMPLYING WITH THE IMPACT TESTS ALSO OUTLINED BY EN12453).
IF COMPLIANCE WITH THE AFOREMENTIONED STANDARD IS UNNECESSARY, SIMPLY POSITION DIP 3 TO OFF. IN THIS CASE THE GATES STOP WITHOUT REVERSING.

RUN TRIMMER (TR1) high-speed electronic regulator
This trimmer permits motor speed adjustment (the default setting is maximum speed). Adjustment of the automation is useful for compliance with European impact standards.

LOW-SPEED TRIMMER (TR2) Electronic slow speed approach control
The slow speed control is performed by adjusting the LOW- SPEED TRIMMER which changes the voltage output across the motor(s) (turning it clockwise increases the speed). Adjustment is performed to determine the correct speed at the end of opening and closing according to the gate or when there is friction that might cause the system to function poorly.

AUTOMATIC CLOSING TRIMMER - TCA (TR3) TOTAL OR PEDESTRIAN default NOT ACTIVATED and LED DL6 OFF (TRIMMER FULLY ROTATED COUNTERCLOCKWISE)
This trimmer makes it possible to adjust the time for total or pedestrian automatic closing. Only with gate completely (total) or partially (pedestrian) open and LED DL6 on (trimmer rotated clockwise).
The pause time can be adjusted from a minimum of two seconds up to a maximum of two minutes.

LED SIGNALS
DL1 program activated (red)
DL2 gate opening M2 (green)
DL3 gate closing M2 (red)

DL4 gate opening M1 (green)
DL5 gate closing M1 (red)
DL6 automatic closing indicator (red)
DL7 photocell contact (NC) (red)
DL8 sensor contact (NC) (red)
DL9 STOP button (NC) (red)
DL10 radio code program (green)

FUSES

Fuse 1 T 8A MOTOR PROTECTION FUSE
F1 T 2A TRANSFORMER PROTECTION FUSE (on the outside of the T2 24V board)

C - MOTOR ROTATIONAL DIRECTION CONTROL

1 - Set DIP 1 to ON => LED DL1 starts flashing.
2 - Press and hold the PROG button. (movement is now manually controlled - open-stop-close-stop-open - etc.) => GREEN LEDS DL2 and DL4 are lit and the gate panels open with a fixed lag of 2 sec. If they close instead of open, release the button and reverse the two wires on the motor used.
3 - After opening release the PROG button and calibrate the mechanical opening stops (on the operator).
4 - Press and hold the PROG button => RED LEDs DL3 and DL5 turn on and the gate panels close with a time lag of 2 sec.
5 - Continue to hold the PROG button until the gate is completely closed.
6 - Leave the two doors completely closed to set the timer.
7 - Reset DIP1 to OFF => LED DL1 turns off, signaling exit from control.
N.B.: During this check the stop, the photocells and the sensors are not active.

D - SETTING THE TIMER FOR 2 MOTORS (#) WITH POWER SENSOR ACTIVATED (DIP 7 ON)

WHILE SETTING THE TIMER THE POWER SENSOR IS CONTINUOUSLY ACTIVATED.

1 - The gate must be completely closed.
2 - Set DIP 2 to ON => LED DL1 will blink rapidly.
3 - Press the PROG button. => M1 opens.
4 - When the mechanical opening stop is reached, the AUTOMATIC POWER SENSOR stops M1 (memorizing the time and the power) => At the same time M2 is triggered to open.
5 - When the mechanical opening stop is reached, the AUTOMATIC POWER SENSOR stops M2 (memorizing the time and the power).
6 - Press the PROG button. => M2 closes.
7 - Press the PROG button. => M1 closes and sets the lag time between M2 and M1. At the same time LED DL1 stops flashing indicating exit from the programming procedure.
Safety and other gate commands now operate normally (inversions, stop, alarms, etc.).
8 - The gate panels will close in high-speed mode (depending on how you set the RUN trimmer) and near total closure in the slow mode (depending on how you set the LOW-SPEED trimmer).
9 - Upon closing the power sensors stop the gate.
10 - AFTER PROGRAMMING RESET DIP 2 TO OFF.

D - SETTING THE TIME FOR ONE MOTOR (M1) (#) WITH POWER SENSOR ACTIVATED (DIP 7 ON)

CAUTION: FOR ONE MOTOR CONTROL DIP 13 MUST BE POSITIONED TO ON; DURING PROGRAMMING THE POWER SENSOR IS CONTINUOUSLY ACTIVE.

The gate must be completely closed.
1 - Set DIP 2 to ON => LED DL1 will blink rapidly.
2 - Press the PROG button. => M1 opens.
When the mechanical opening stop is reached, the AUTOMATIC POWER SENSOR stops M1 (memorizing the time and the power).
3 - Press the PROG button. => M1 closes.
At the same time LED DL1 stops flashing indicating exit from programming. Safety and other gate commands now operate normally (inversions, stop, alarms, etc.).
Upon closing the power sensor stops the gate.
4 - **AFTER PROGRAMMING RESET DIP 2 TO OFF.**

(#) DURING PROGRAMMING THE SAFETY DEVICES ARE ACTIVE AND STOP THE PROGRAMMING PROCEDURE (LED DL1 FROM FLASHING BECOMES CONSTANT). TO REPEAT PROGRAMMING SET DIP 2 TO OFF, CLOSE THE GATE USING THE PROCEDURE "MOTOR ROTATIONAL DIRECTION CONTROL" AND REPEAT THE DESIRED PROGRAMMING PROCEDURE.

D - SETTING THE TIME FOR 2 MOTORS (#) WITH TIME OPERATION (DIP 7 OFF)

1 - The gate must be completely closed.
2 - Set DIP 2 to ON => LED DL1 will blink rapidly.
3 - Press the PROG button. => M1 opens.
4 - When the mechanical opening stop is reached, wait a second then press the PROG button => M1 stops and M2 opens.
5 - When the mechanical opening stop is reached => wait 1 second and press the PROG button => M2 stops.
6 - Press the PROG button => M2 closes.
7 - Press the PROG button => M1 closes setting the time lag between M2 and M1.
At the same time LED DL1 stops flashing indicating exit from the programming procedure.
Safety and other gate commands now operate normally (inversions, stop, alarms, etc.).
8 - After the set amount of time, the gate will stop.
9 - **AT THE END OF PROGRAMMING RESET DIP 2 TO OFF.**

NOTE: The slowdown is automatically determined by the control board during the time setting phase and is activated at about 50 to 60 cm before reaching the mechanical opening or closing limit.

D - SETTING THE TIME FOR 1 MOTOR (#) WITH TIME OPERATION (DIP 7 OFF)

CAUTION: FOR ONE MOTOR CONTROL DIP 13 MUST SET TO ON

1 - The gate must be completely closed.
2 - Set micro-switch DIP 2 to ON => LED DL1 will blink rapidly.
3 - Press the PROG button => M1 opens.
4 - When the mechanical opening stop is reached, wait a second then press the PROG button => M1 stops.
5 - Press the PROG button => M1 closes.
At the same time LED DL1 stops flashing indicating exit from the programming procedure.
Safety and other gate commands now operate normally (inversions, stop, alarms, etc.).
6 - After the set amount of time, the gate will stop.
7 - **AT THE END OF PROGRAMMING RESET DIP 2 TO OFF.**

D - SETTING PEDESTRIAN OPENING TIMES (#) BOTH FOR TIME AND POWER SENSOR OPERATION

With gate closed:
1 - First set DIP2 to ON (LED DL1 flashes quickly) and then DIP1 to ON (LED DL1 flashes slowly).
2 - Push the pedestrian button (COM-PED.BUTT) => M1 opens.
3 - Push the pedestrian button to stop movement (thereby setting M1 opening).
4 - Push the pedestrian button to start closing.
5 - Upon closing reset DIP 1 and 2 to OFF.

(#) DURING PROGRAMMING THE SAFETY DEVICES ARE ACTIVE AND STOP THE PROGRAMMING PROCEDURE (LED DL1 FROM FLASHING BECOMES CONSTANT).
TO REPEAT PROGRAMMING SET DIP 2 TO OFF, CLOSE THE GATE USING THE PROCEDURE "MOTOR ROTATIONAL DIRECTION CONTROL" AND REPEAT THE DESIRED PROGRAMMING PROCEDURE.

E - RADIO CODE PROGRAMMING FOR TOTAL OPENING

(UP TO 62 CODES - CRX MODELS ONLY)

Programming can be done only when the gate is stationary.
1 - First set DIP 1 to ON and then DIP 2 to ON.
2 - The red LED DL1 flashes ON every 1 sec. and OFF for 10 seconds.
3 - Press the remote control button (usually channel A) within the allotted 10 seconds. If the remote is memorized properly LED DL10 (green) blinks.
4 - The programming time for codes is automatically renewed in order to memorize the next remote control.
5 - To finish programming, wait 10 seconds, or press the PROG button briefly. The red LED DL1 stops flashing.
6 - Reset DIP 1 to OFF and DIP 2 to OFF.
7 - End of procedure.

CANCELLATION OF ALL RADIO CODES FOR TOTAL OPENING

Cancellations can only be performed when gate is stationary.
1 - Set DIP 1 to ON and then DIP 2 to ON.
2 - The red LED DL1 flashes ON every 1 second and OFF for 10 seconds.
3 - Press and hold the PROG button for 5 seconds. Memory cancellation is indicated by two flashes of green LED DL10.
4 - The red LED DL1 remains active and you can add new codes as shown above.
5 - Reset DIP 1 to OFF and DIP 2 to OFF.
6 - End of procedure.

INDICATOR MEMORY FULL OF RADIO CODES FOR TOTAL OPENING

Indication only when gate is stationary.
1 - Set DIP 1 to ON and then DIP 2 to ON.
2 - The green LED DL10 flashes 6 times when the memory is full (62 codes).
3 - LED DL1 will then remain active for 10 seconds enabling possible cancellation of codes.
4 - Reset DIP 1 to OFF and DIP 2 to OFF.
5 - End of procedure.

F - PROGRAMMING PEDESTRIAN OPENING RADIO CODES

(UP TO 62 CODES - CRX MODELS ONLY)

Programming can be done only when the gate is stationary.
1 - Set DIP 1 to ON and then DIP 3 to ON.
2 - The red led DL1 flashes ON for 1 second and OFF for 1 second for 10 seconds.
3 - Press the remote control button (usually channel B) within the allotted 10 seconds. If the remote is properly memorized LED DL10 (green) blinks.
4 - The programming time for codes is automatically renewed in order to memorize the next remote control.
5 - To finish programming wait 10 seconds, or press the PROG button briefly. The red LED DL1 stops flashing.
6 - Reset DIP 1 to OFF and DIP 3 to OFF.
NOTE: If LED DL1 CONTINUES BLINKING QUICKLY IT MEANS THAT DIP 1 IS STILL SET TO ON AND THAT ANY OPERATION IS REFUSED.
7 - End of procedure.

CANCELLATION PROCEDURE FOR ALL PEDESTRIAN OPENING RADIO CODES

Cancellation can only be performed when the gate is stationary.
1 - Set DIP 1 to ON and then DIP 3 to ON.
2 - The red LED DL1 flashes ON for 1 second and OFF for 1 second for 10 seconds.
3 - Press and hold the PROG button for 5 seconds. Memory cancellation is indicated by two flashes of green LED DL10.
4 - The red LED DL1 remains active and you can add new codes as shown above.
5 - Reset DIP 1 to OFF and DIP 3 to OFF.
6 - End of procedure.

INDICATION MEMORY FULL OF PEDESTRIAN OPENING RADIO CODES

Indication only when the gate is stationary.
1 - Set DIP 1 to ON and then DIP 3 to ON.
2 - The green LED DL10 flashes 6 times when the memory is full (62 codes).
3 - The LED DL1 will then remain active for 10 seconds enabling possible cancellation of codes.
4 - Set DIP 1 to OFF and DIP 3 to OFF.
5 - End of procedure.

CONTROL ACCESSORIES OPERATION

ATTENTION: ONLY IMPULSIVE COMMANDS HAVE TO BE CONNECTED.
Make sure that any other type of command accessories (e.g. mass detectors) used on the installation are set in the IMPULSIVE mode, otherwise, the gate will be operated even without the protection of the safety devices.

STEP-BY-STEP BUTTON (COM-K BUTTON)

If DIP6 ON => It cyclically performs the commands open-stop-close-stop-open etc.
If DIP6 OFF => Opens the gate when closed. There is no effect if activated while opening. If activated when gate is open, the gate closes. If activated while closing, the gate reopens.

OPEN BUTTON (COM-OPEN)
The button controls the opening movement when the gate is stationary. If activated while closing, it reopens the gate.

CLOCK FUNCTION OF OPEN BUTTON

If you want the Clock Function must request T2 24V with firmware 02.
ATTENTION: A CLOCK CONNECTED TO T2 24V with fw 03 or more ACTIVATES THE OPENING MOVEMENT OF THE GATE WITHOUT HAVING THE PROTECTION OF THE SAFETY DEVICES!

This function is useful during peak hours, when vehicle traffic is slow (e.g. entry/exit of workers, emergencies in parking or residential areas and, temporarily, for moving operations).

CLOCK FUNCTION APPLICATION
It is necessary to request a T2 24V control panel with firmware 02. By connecting a switch and/or a daily/weekly clock (instead of or in parallel to the open button N.O. "COM-OPEN"), you can open and keep the automation open for as long as the switch is pressed or the clock remains active. Command functions are inoperative with open automation. Releasing the switch or at the preset time, the automation closes immediately.

CLOSE BUTTON (COM-CLOSE)
Controls the closing movement when the gate is stationary.

REMOTE CONTROL
If DIP6 ON => It cyclically performs the commands open-stop-close-stop-open etc.
If DIP6 OFF => Opens the gate when closed. There is no effect if activated while opening. If activated when gate is open, the gate closes. If activated while closing, the gate reopens.

PEDESTRIAN OPEN BUTTON (COM-PED.BUTT.)
Partial opening and closing control.
During pedestrian opening, pausing or closing, you can control the opening of any command linked to the T2 24V board. With DIP 6 you can choose the operation mode of the pedestrian push button.
If DIP6 ON => It cyclically performs the commands open-stop-close-stop-open etc.
If DIP6 OFF => Opens the gate when closed. There is no effect if activated while opening. If activated when gate is open, the gate closes. If activated while closing, the gate reopens.

ELECTRIC LOCK (LOCK)
Set DIP 8 to ON to enable control of the electric lock when opening.

ELECTRIC LOCK PULSE RELEASE IN OPENING
Set DIP 9 to ON to enable the electric lock pulse release when opening (provided DIP 8 is ON).
If a command to open the gate is given when the gate is closed, the closing movement is performed for 0.5 seconds and the electric lock is simultaneously activated (followed by a 0.5 second pause and then the opening of the gate).

ELECTRIC LOCK PULSE ENGAGEMENT
Set DIP 10 to ON to enable the pulse engagement of the electric lock when closing. Upon closing, motors are activated for 0.5 seconds at full voltage to ensure lock engagement.

EASY MOTOR RELEASE
Set DIP 11 to ON to enable easy manual release (provided that DIP 10 is ON), upon closing a reverse motion with a fixed time of 0.2 seconds occurs to facilitate manual release.

OPERATION OF SAFETY ACCESSORIES

PHOTOCELL (COM-PHOT)
DIP 4 OFF => if an obstacle is placed in range of the photocells when the gate is closed, the gate does not open. During operation, photocells work when opening (by starting the opening movement only after the obstacle is removed) and closing (by starting the reverse movement only after the obstacle is removed).
DIP 4 ON => if an obstacle is placed in range of the photocells when the gate is closed and the command to open is given, the gate opens (the photocells do not work while opening). Photocells work only during closing (with reverse motion restored after a second, even if they are still engaged).

CONTROL OF IMMEDIATE CLOSING AFTER MOVEMENT IN FRONT OF PHOTOCELLS
DIP 16 ON and DIP 4 OFF => if photocells are engaged during opening, the gate stops and the gate only closes one second after the photocells are disengaged.
DIP 16 ON and DIP 4 ON => if photocells are engaged during opening, the gate continues to open. Upon disengagement of the photocells, the gate stops and reverses closing motion after a one second pause.
If total opening is reached (end of opening time), immediate closing is deactivated and automatic time closing is activated (if TCA trimmer is activated and LED DL6 is on). If during closing there is a rapid movement (e.g. pedestrian) the gate will open again for two seconds and then close once again.
DIP 12 OFF => immediate closing after movement in front of the photocells is deactivated.
N.B.: Please check photocell operation at least every six months.

EDGE (SAFETY STRIP) (COM-EDGE)
If engaged during opening, reverses the motion when closing.
If engaged when closing, reverses the motion when opening.
If it remains engaged again, it performs a further reversal after 2 seconds, then performs an additional short reversal and then gives the sensor failure or engaged alarm (N.O. contact).
If the sensor remains engaged (N.O. contact) no movement is allowed.
If not used, jump the terminals COM-EDGE.

MONITORING OF SAFETY SENSORS (A+ TEST A-)
Sensors can be monitored through the A+ TEST input and DIP 12 ON.
The monitoring consists of a functional test of the sensor run after every full gate opening.
Closing the gate is therefore permitted only if the sensors have passed the functional test after each opening.
CAUTION: MONITORING OF THE SENSOR INPUT CAN BE ACTIVATED WITH DIP 12 ON OR DEACTIVATED WITH DIP 12 OFF. IN FACT, THE FUNCTIONAL TESTING OF SENSORS IS 'POSSIBLE ONLY IF THESE DEVICES HAVE THEIR OWN POWER SUPPLY.
A MECHANICAL SENSOR CAN NOT BE MONITORED, SO DIP 12 SHOULD BE SET TO OFF.

SENSOR AUTOTEST ALARM (DIP 12 ON)
If the sensor fails the monitoring test after opening, an alarm is displayed by the blinker lighting up. Gate closure is not allowed in this condition. Normal operation can be restored only by repairing the sensor and pressing one of the activated controls.

STOP BUTTON (COM-STOP)
The STOP button stops the gate during any operation.
If held when the gate is fully open (or partially when using the pedestrian control) automatic closing is temporarily deactivated (if activated by the TCA trimmer and LED DL6 on). It is therefore necessary to use a new command to make it close.
The automatic closing function is reactivated on the next cycle (if activated by the TCA trimmer and LED DL6 on).

POWER SENSOR ALARM
The T2 24V control panel has automatic sensors that make the movement of the gate reverse in case of impact against objects or persons in accordance with the current EN standards (always use the right tool to ensure compliance with the values imposed by the standard), without special adjustments on the control panel, as it operates using special internal software. If the power sensor is used in opening or closing (only in high-speed) and then again, in the opposite direction, the gate stops and then reverses for 1 second.
The alarm status will be displayed by the blinker which will remain active for one minute, during which time you can restore gate operation by pressing any command button.

FUNCTIONING IN DEAD MAN MODE WHEN THE SAFETY DEVICES ARE FAILING
If the safety edge fails or remains engaged for more than 5 seconds, or if photocell fails or remain engaded for more than 60 seconds, the open, close, k button and pedestrian commands will work only in dead man mode.
The signal that this mode has been activated is given by the blinking of the programming led.
With the blinking of the programming led, the opening and closing operation are allowed only with the command button pressed and held. The radio commands and that of automatic closing, will be excluded, since their use in this mode, is not allowed by the norms.
Once the failing safety device is repaired, in automatic after 1 second, all standard commands that were selected, such as step by step, automatic mode, radio commands and automatic closing start functioning again.
Note 1: during this functioning in dead man mode, in case of damage to the safety strips (or photocells) the photocells (or safety strips) still work by interrupting the operation in progress.
Note 2: the stop command is not to be considered a safety command that can be bypassed in this mode. Therefore, when pressed or damaged, it will not allow any movement of the gate.
The dead-man operation is only an emergency operation which must be activated for a very short period and with the complete installation at sight so to have a secure and safe control of the system. As soon as possible however, the failing safety devices must be repaired and activated.

BLINKER
N.B.: This control panel can power ONLY BLINKERS ON A (ACG7061) CIRCUIT with lamps up to 24V and 20W.

PRE-BLINKING
DIP 5 - OFF => the motor and blinker begin simultaneously.
DIP 5 - ON => the blinker begins 3 seconds before the motor.

GATE OPEN WARNING LIGHT (COM-SIGNAL)
Signals when the gate is open, partially open or not closed completely. Turns off only when the gate is completely closed. This signal is active during programming. **N.B.:** Max 3 W. If push buttons or lamps are in excess, the control panel processes will be endangered and possibly halt operation.

OPERATION AFTER A BLACK-OUT (WITHOUT BATTERIES)
When the power supply comes back the DL1 led turns on and remains on for all the time the gate stays open. The led will turn off only once the gate is completely closed. It is recommended to fully open the gate. Let the gate close by itself or with automatic closing, or wait until the blinker stops flashing before commanding it to close.
This will allow the gate to realign. If, motors were released and moved from the normal position when closed during the blackout, the first movement after power returns must be complete.
If the black out occurs when the gate is still moving or when the gate is open and the first command sent after the black out is a closing command, the closing of the gate will be carried out with a total delay between the two gate leaves. Therefore, first the leaf M2 will close completely; once it is off, M1 will start closing. This separate movement of the two gate leaves is done to avoid their incorrect overlapping.

TECHNICAL SPECIFICATIONS

- Temperature range	0 ÷ 55°C
- Humidity	<95% without condensation
- Voltage	230V~ ± 10% (120V/60Hz upon request)
- Frequency	50/60 Hz

- Battery power	20-24Vdc
- Transformer Power	130VA - primary 230Vac - secondary 18Vac
- Maximum absorption	50 mA
- Network Micro-switches	100ms
- Maximum power gate open indicator	24Vdc 3W (equivalent to one 3W or 5 LED light bulb with resistor in series at 2.2 K ohm)
- Maximum blinker power	24Vdc 20W
- Power available for photocells and accessories	1A ± 15%
- Power available for radio connector	200Ma
RADIO SPECIFICATIONS (model T2 24V CRX)	
- Receiving Frequency	433,92 MHz
- Impedance	52 OHM
- Sensitivity	>2,24µV
- Pick-up time	300ms
- Drop time	300ms

- All inputs must be used as clean contacts because the power is generated internally (secure power) to the board and is set up to ensure compliance with double or reinforced insulation with regard to dangerous voltage.
- Any external circuits connected to the outputs of the control panel must be made in such a manner as to ensure compliance with double or reinforced insulation with regard to dangerous voltage.
- All inputs are controlled by a programmed integrated circuit that performs a self check every time it starts operating.

TROUBLE SHOOTING

After having carried out all connections, by carefully following the layout and having positioned the gate in intermediate position, check the correct ignition of red LEDS DL7, DL8 and DL9

In case of no ignition of the LEDS, always with gate in intermediate position, check the following and replace any faulty components.

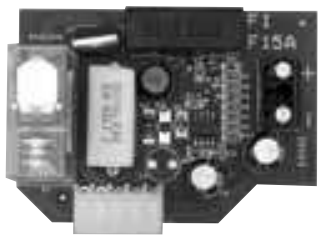
DL7 switched off Faulty photocells
DL8 switched off Faulty safety edge (In case the edge is not connected, carry out jumper between COM and EDGE)
DL9 switched off Stop button malfunction (if Stop is not connected, perform the jump between COM and STOP).

During functioning with personnel present, with DIP 1 at ON, check that during opening of M1 and M2 the green DL2 and DL4 LEDS switch on and that during closing of M1 and M2 the red DL3 and DL5 LEDS switch on.
Or else, reverse the wires of the motor.

FAULT	SOLUTION
After having carried out the various connections and having supplied voltage, all the LEDS are switched off.	Check fuses F1, FUSE 1. If the fuse is blown, use only a suitable replacement. F1 T 2A TRANSFORMER PROTECTION FUSE (on the outside of the T2 24V board)
The motor opens and closes, but it has no strength and moves slowly.	FUSE 1 8A MOTOR PROTECTION FUSE
The gate opens but does not close after the time set.	Check trimmers RUN and LOW-SPEED adjustment.
	Make sure that the TCA trimmer is activated with LED DL6 on. OPEN button always on, replace the OPEN control button or switch. Sensor Auto test failed, check the connections between the control panel and the sensor power supply. **Warning:** If you are not using a power supply for the sensors, DIP 12 should be OFF.
The gate does not open or close by activating the various K, Radio, Open and Close buttons.	Faulty safety edge contact. Faulty photocells contact with DIP 4 OFF. Fix or replace the relative contact.
The electric lock does not work.	Ensure to have enabled DIP 8 at ON.
LED DL1 blinks rapidly and no movement is activated.	Place dip switches 1, 2 or 3 in the OFF position.

ACCESSORIES - For the connections and the technical data of the optional equipments follow the relevant handbooks.

BATTERY CHARGE CARD



code ACG4648

MECHANICAL BOLT

Mechanical bolt suitable for 2 leaves gate to latch closed the gate to the ground. code ACG5000

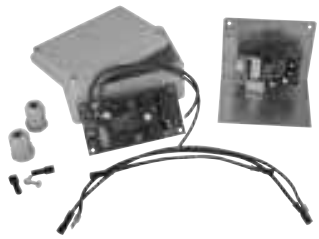
BATTERY

Battery 2,2Ah 12V code ACG9515

ELECTRIC LOCK

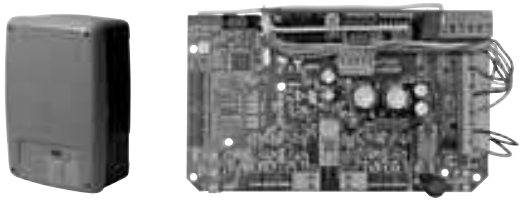
Horizontal lock - right external view - 12Vac code ACG8660
Horizontal lock - left external view - 12Vac code ACG8670
Vertical lock - 12Vac code ACG8650

SET SOLAR AMPLIFIER



Interface for 50W solar panels. code AD00319

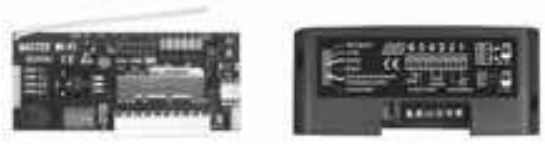
T2 24V Wi-Fi



Control panel with impact sensors and MASTER Wi-Fi card.
With container. code ABT2025W

Wi-Fi DEVICES

MASTER Wi-Fi



RECEIVER CARD TO MANAGE WIRELESS SYSTEM
with connector - 12÷30V ac/dc code ACG6094
with terminal block - 12÷30V ac/dc code ACG6099

NOVA Wi-Fi

PHOTOCELLS WITHOUT WIRES code ACG8037
PAIR OF COLUMS NOVA code ACG8039

TOUCH Wi-Fi

STRIP WITHOUT WIRES code ACG3016

SPARK Wi-Fi

BLINKER WITHOUT WIRES code ACG7064
LATERAL SUPPORT code ACG7042

BLOCK Wi-Fi

KEY SELECTOR WITHOUT WIRES code ACG6098

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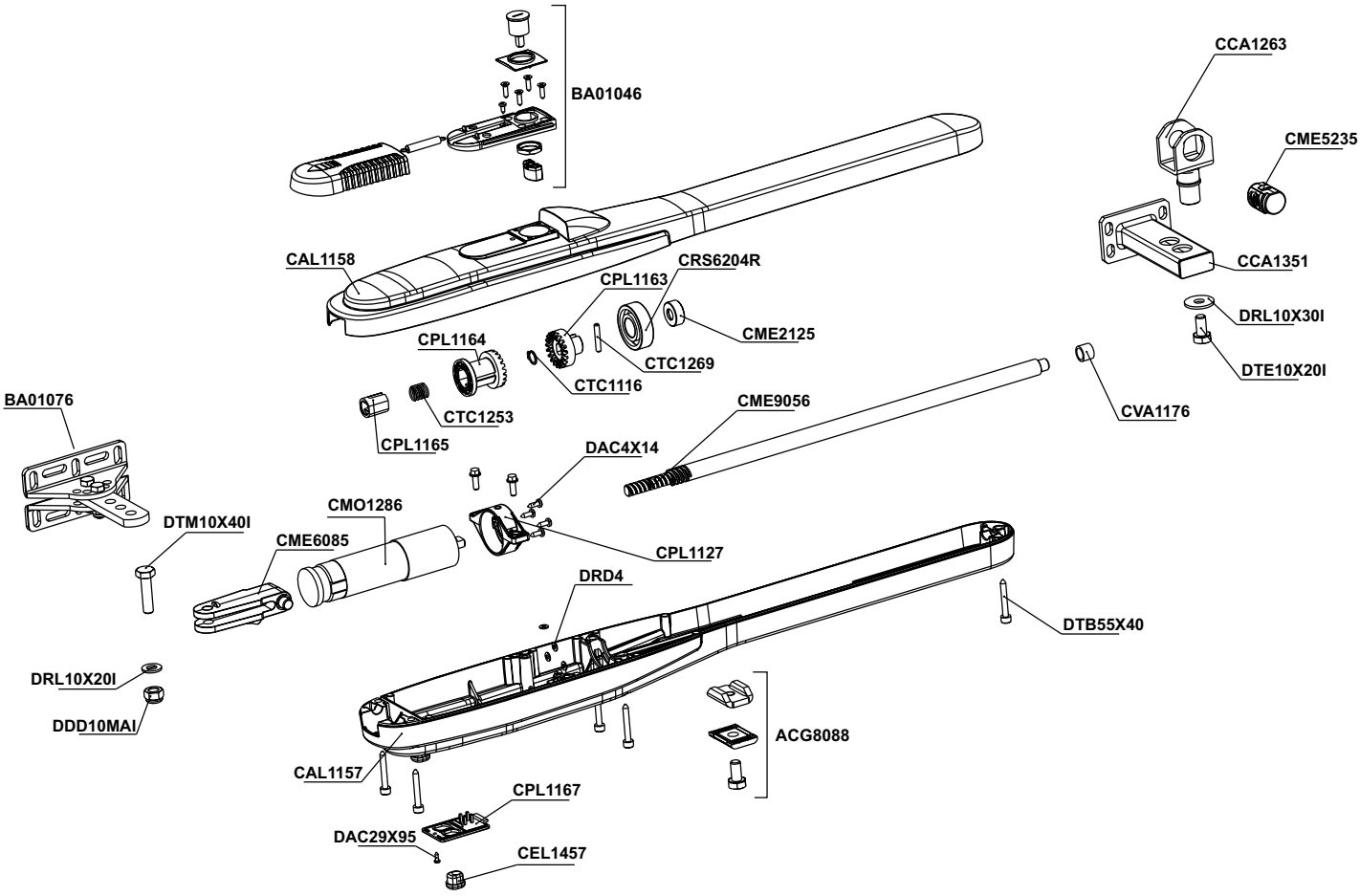
PRINCE 24V



CE

MADE IN ITALY

Questo prodotto è stato completamente progettato e costruito in Italia · Ce produit a été complètement développé et fabriqué en Italie · This product has been completely developed and built in Italy · Dieses Produkt wurde komplett in Italien entwickelt und hergestellt · Articulo totalmente proyectado y producido en Italia

Codice	Denominazione Particolare	Codice	Denominazione Particolare	Codice	Denominazione Particolare
ACG8088	Fermo meccanico in chiusura PRINCE	CPL1163	Innesto-2 Prince	DRL4X10Z	Rond. Piana 4x10
BA01046	Serie access. cilind. PRINCE	CPL1164	Innesto-1 PRINCE	DRL10X20I	Rond. Piana 10X20 INOX
BA01076	Sacch. access. PRINCE	CPL1165	Mozzo sblocco PRINCE	DRL10X30I	Rond. Piana 10X30 INOX
CAL1157	Semiguscio inferiore	CPL1167	Piastra morsettiera	DTB55X40	Vite TCEI 5,5X38 autof. zinc.
CAL1158	Semiguscio superiore	CRS62042R	Cusc. 6204/2RS	DTE8X30I	Vite TE8X30 INOX UNI 5739
CCA1263	Gruppo Forcella - Perno	CTC1116	Seeger E12	DTE10X20I	Vite TE10X20 INOX
CCA1351	Piastra cancello	CTC1253	Molla ritorno sblocco	DTM10X40I	Vite TE 10X40 INOX UNI 5737
CEL1457	Blocca cavo	CTC1269	Spina CIL. 5X30 non temprata		
CME5235	Chiocciola bronzo	CVA1176	Boccola 12X16X12 bronzo F7/R7		
CME6085	Forcella posteriore	DAC29X95	Vite aut.TC.CR. 2.9X9.5 zincat		
CME2125	Boccola vite senza fine	DAC4x14	Vite aut.TC.CR. 4X14		
CME9056	Vite s/fine	DAE55X16	Vite aut. TC.TE 5.5x16 P.TRINCA Z		
CMO1286	Mot. PRINCE EPIC.MBT 24V	DDD8MAI	Dado autob. 8MA INOX		
CPL1127	Supporto motore 24V-230W	DDD10MAI	Dado autob. 10MA INOX alto		

Cod. CVA2029 - 27112012 - Rev. 07

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Via Matteotti, 162
Tel. +39.030.2135811
Fax +39.030.21358279
www.ribind.it - ribind@ribind.it

8 028265 128903

SELF INSTALL - NEED TECHNICAL ASSISTANCE?

OPTION 1: DIRECT WITH THE SERVICE DESK – QUICKEST AND MOST EFFECTIVE METHOD

Submit your enquiry direct with the service desk at – service@automaticsolutions.com.au
The service desk has the most experienced staff in Australia to help with your problem but they need your help.

- **Describe your problem in detail and as clearly as possible. Don't forget to include a telephone number.**
- **Be certain to detail which model or models of you are working with.**
- **Send photos of the installation – they love photos. The people at the service desk are good but they are even better when they can see the installation. Send photos of the overall scene so they can see the entire installation. Also send photos of the wiring to the control board and any other part of the installation you think is relevant.**
- **Send video if appropriate. Smartphone's these days take remarkably good video in small file sizes which can be emailed in a moment. If your problem needs a video to show the issue please feel free to send it.**

NOTE: THIS IS BY FAR THE FASTEST AND MOST SUCCESFUL WAY TO SOLVE YOUR PROBLEM
PHOTOS AND VIDEOS ARE THE NEXT BEST THING TO BEING THERE

OPTION 2: LODGE YOUR ENQUIRY LOCALLY - SLOWER BUT CAN STILL BE EFFECTIVE

Make contact with the store of purchase. Branch staffs are typically not technicians and dependent on their length of service will have varying degrees of technical knowledge. If they cannot help however they will certainly either source help locally from their technicians or make contact with the service technicians on your behalf.

OPTION 3: SERVICE CALL WITH AUTOMATIC SOLUTIONS TECHNICIAN – SLOWEST METHOD

If you fall within the local branch service area it may be possible to book a local technician to look at your installation. Wait times will vary dependent on local workloads. The cost is a service fee which includes the first half hour and the hourly rate thereafter. If any Automatic Solutions provided parts are found to be defective and within warranty these will be provided free of charge.
(NOTE: If you suspect that any parts are defective and within warranty you may wish to consider option 4)

A note on this option: If you decide on this option you will be asked to sign an "authorisation to proceed" which will provide legal authority and payment security. This form has three options available of which only the first two are available to you. The third option is for warranty repairs only for full install customers. Self install customers requiring warranty only service need to refer to option four below.

IMPORTANT: IN SHORT THIS OPTION WILL INCUR CHARGES

OPTION 4: RETURN THE PRODUCT IF BELIEVED TO BE FAULTY

As a self install customer who has purchased product if you believe the product to be faulty rather than an installation or site problem you have the option of returning the product for evaluation and to exercise your right to a replacement, repair or refund as applicable. All returned product is forwarded immediately to the service technicians for evaluation and response. There are two main methods available to return product –

- **Direct to the service centre – this is the quickest method as it cuts out the branch delay**
- **Via the branch of purchase – slower because of the delay at the branch**

When choosing this option you need to complete a product return form. This form gives you all the information on procedure involved and where to send to. These are available at the branch of purchase, can be emailed to you (contact your branch), or available here - http://automaticsolutions.com.au/page/warranty.php